

## REMARKS/ARGUMENTS

Reconsideration of this application, as amended, is respectfully requested.

### Regarding the Claims

**The Office has objected to claims 7 and 43 because of informalities,** specifically that “lanthanum is a lanthanide metal.” Claim 7 has been cancelled without prejudice and claim 43 has been amended to remove “lanthanum”, with the understanding that lanthanum is a lanthanide, as already recited in the claim. It is respectfully submitted that the Office’s objection to claim 43 has been obviated.

**The Office has rejected claims 9, 15, 16, 18, 34, 45, 46 and 52 under 35 USC 112, as being indefinite for failing to point out and distinctly claim the subject matter which Applicants regard as the invention.**

Claims 9, 15, 16, and 18 have been cancelled without prejudice.

Claim 34 has been amended to remove the term “metal oxide” and claim 33 has been amended to include the “metal oxide”, as supported by original claim 34 and the description at page 11, lines 27-30. It is respectfully submitted that the Office’s rejection of claim 34 under 35 USC 112 has been obviated.

Claim 45 has been amended to remove the terms “rare-earth metal oxides” and “rare-earth metal hydroxides” and claim 42 has been amended to include “rare-earth metal oxides” and “rare-earth metal hydroxides”, as supported by original claim 45 and the description at page 12, lines 10-14. It is respectfully submitted that the Office’s rejection of claim 45 under 35 USC 112 has been obviated.

With regard to claim 46, the Office action has indicated that the term "lanthanum oxide" in claim 46 is used by the claim to mean "rare earth metal salt", while lanthanum oxide is not a rare earth metal salt, and that the term is indefinite because the specification does not clearly redefine the term. The Applicant has amended claim 46 to read "metal oxide" instead of "metal salt." It is respectfully submitted that the Office's rejection of claim 46 under 35 USC 112 has been obviated.

With regard to claim 52, the Office action has rejected claim 52 under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, and that the omitted elements are: "what is 1-20% by weight of the catalyst support." The Applicant has amended claim 52 to read "wherein the catalyst support contains from about 1% by weight to about 20% by weight of the promoter," instead of "by weight of the catalyst support." Bases for this amendment may be found at page 10, lines 10 – 11 of the specification; therefore no new matter has been added. It is respectfully submitted that the Office's rejection of claim 52 under 35 USC 112 has been obviated.

**The Office has objected to the specification because of the following informalities: all corresponding terms as listed in the rejections of claims 9, 15, 16, 18, 34, 45, 46 and 52 under 35 USC 112 addressed above.**

The Applicant has submitted on pages 2 – 3 of this Amendment replacement paragraphs for paragraph 3, beginning at page 11 line 21, and paragraph 2, page 12 beginning at line 10. Paragraph 3, page 11 now reads,

The catalytically active component used may include transition metal oxides and/or transition metal salts such as transition metal nitrates, transition metal carbonates, transition metal oxalates, transition metal formates, and the like.”

Paragraph 2, page 12 now reads, “The promoter may be in the form of rare-earth oxides and/or rare-earth salts including rare-earth nitrates, carbonates, hydroxides, oxalates, and the like. It is respectfully submitted that the Office’s objection to the specification has been obviated.

**The Office has rejected claims 1-5, 19, 20, 56, 58 and 60 under 35 USC 102(b), as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Aldridge (U.S. Patent No. 4,456,703).**

Claims 1-5, 19, 20, 58 and 60 have been cancelled without prejudice, rendering this rejection moot. With respect to claim 56, claim 56 has been amended to be dependent upon claim 55, which is ultimately dependent upon independent claim 25, which has not been rejected in view of Aldridge.

**The Office has rejected claims 1-17, 21-24, 56 and 61 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Sambrook et al. (CA 2359940 A1).**

Claims 1-17, 21-24 and 61 have been cancelled without prejudice, rendering this rejection moot. With respect to claim 56, claim 56 has been amended to be dependent upon claim 55, which is ultimately dependent upon independent claim 25, which has not been rejected in view of Sambrook.

**The Office has rejected Claims 25-51, 53-55, 57 and 59 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Sambrook et al. (U.S. Patent No. 4,469,815, hereinafter “Sambrook”) in view of Durand et al. (U.S. Patent No. 5,736,482, hereinafter “Durand”).**

The applicant first notes that claim 40 has been amended to further include alumina as a catalyst support. This amended language is supported throughout the specification, such as at p. 10 line 17, and at p. 13, line 16.

The Examiner asserts that Sambrook discloses a process for making a supported catalyst, as claimed in independent claim 25. Firstly, the Examiner asserts that Sambrook combines nickel nitrate or carbonate (Col. 1, lines 24-25, and Col. 2, lines 47-68), a catalyst support optionally containing a promoter (Col. 2, lines 25-36 and 47-68), and an acid material to form a slurry. Applicant respectfully disagrees. Sambrook does not teach or suggest the combining a catalytic active component, a catalyst support optionally containing a promoter therein, and an acid material to form a slurry. Sambrook does not teach or suggest utilizing an acid material to form a slurry. In fact, in Example 1 of Sambrook, nickel nitrate, aluminum nitrate, and lanthanum nitrate are dissolved in water. No slurry is formed. Moreover, a solution of anhydrous ammonium bicarbonate is added not an acid material.

Secondly, the Examiner asserts that Sambrook teaches converting the catalytic active component at a pH of 7-8 (Col. 4, lines 4-5). Claim 25 is directed to “adjusting the slurry to a pH of about 7 to about 8”. According to Example 1 of

Sambrook, a slurry does not exist until anhydrous ammonium bicarbonate is added. Therefore, the pH of a slurry is not adjusted; instead, a slurry is formed in Sambrook by the addition of the bicarbonate.

Therefore, the process of claim 25 is not taught or suggested by Sambrook. Durand does not make up for the deficiencies of Sambrook. Therefore, claims dependent therefrom (claims 27-47, 49-57, and 59) are patentable over these references.

The Examiner also asserts that Sambrook teaches that the catalyst may be used in autothermal reforming reactions (col. 1, lines 4-8 and col. 2, lines 37-47). Sambrook does not teach or suggest using catalysts in autothermal reforming reactions.

The Examiner asserts that Sambrook discloses a process for making a supported catalyst, as claimed in independent claim 26. The Examiner asserts that Sambrook disperses a catalytic active component within the pores of the catalyst support, which is treated with an acid material (Col. 3, lines 19-21), wherein the catalyst optionally contains a promoter therein; and converting the catalytic active component to an active metal complex intermediate at a pH of about 7 to about 8, preferably about 7.5 (col. 4, lines 4-5) the active metal complex intermediate coating surfaces of the catalyst support (col. 2, lines 28-32, col. 2, lines 47-68). Applicant submits that the Examiner is using hindsight to arrive at the process claimed in claim 26. At col. 3, lines 19-47, Sambrook describes that impregnation of the ceramic matrix with aluminum salts can be done using homogeneous precipitation. In particular, an alumina matrix is

impregnated with a solution containing nickel lanthanum, aluminum nitrates and a precipitating agent, such as urea. The alumina matrix is heated to a temperature to hydrolyze the urea to bring about deposition of insoluble hydroxides in the pores. There is no teaching of “dispersing a catalytic active component within pores of a catalyst support”, as claimed, and “converting the catalytic active component to an active metal complex intermediate at a pH of about 7 to about 8, the active metal complex intermediate coating surfaces of the catalyst support.” Although Sambrook discusses pH in Example 1, as noted by the Examiner, it is not taught in conjunction with impregnation (i.e. “dispersing a catalytic active component within pores of a catalyst support”).

Therefore, the process of claim 26 is not taught or suggested by Sambrook. Durand does not make up for the deficiencies of Sambrook. Therefore, claim 48, dependent therefrom, is also patentable over these references.

**The Office has rejected claims 1-19, 21-24, 56, 58, 60 and 61 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Chu et al.**

Claims 1-19, 21-24, 56, 58, 60 and 61 have been cancelled without prejudice, rendering this rejection moot. With respect to claim 56, claim 56 has been amended to be dependent upon claim 55, which is ultimately dependent upon independent claim 25, which has not been rejected in view of Chu et al. and/or Cheng et al.

In view of the foregoing, the Applicant respectfully submits that the independent claims patentably define the present invention over the citations of record. Further, the dependent claims should also be allowable for the same reasons as their respective base claims and further due to the additional features that they recite. Separate and individual consideration of the dependent claims is respectfully requested. It is respectfully submitted that with the instant Amendment, the Applicant's case is now allowable, and allowance thereof is respectfully requested.

To obtain entry of this Amendment, the Applicant is submitting a Petition for a Three Month Extension of Time herewith. The Applicant's agent will submit the required fees at the time of filing this Amendment electronically via EFS-Web. If for any reason the Examiner believes that a telephone conference might facilitate the prosecution of this case, he is respectfully requested to call the Applicant's agent, John M. Hammond.

Respectfully submitted,

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